

ABSTRACT

The invention concerns a liquid purifying apparatus that bridges the gap between prior art sand filters as applied mainly in the field of water treatment and pressure leaf, candle and cartridge filters as well as filter presses for filtration and purification in the liquid processing industries. In contrast to prior art sand filters where static beds of granular material are regenerated by backwashing techniques, the granular beds of the present invention are transported out of the filter container by a moving filter belt into an external bed-regenerating device after which the regenerated and reactivated bed is reused by dosing to the filter container with the incoming fluid to be purified. It is proposed to simultaneously dose a variety of active powdered adsorbents, such as activated carbon, molecular sieves, etc., to the purifier influent to remove specific dissolved contaminants, whereby the surface charge and particle size of this material are designed to adhere to the surface of the particulate matter of the bed. The dosing of active adsorbents and the particulate matter of the bed is controlled by a programmed microprocessor receiving input process data from influent and effluent instrumentation. A further feature is the provision of apparatus for feeding prefabricated sections of filter media such as membranes, non-woven and woven materials into the filter container for application in fully automatic operation throughout the whole spectrum of industrial and communal liquid purification processes.